



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0508; Project Identifier MCAI-2021-01120-T; Amendment 39-22118; AD 2022-14-13]

RIN 2120-AA64

Airworthiness Directives; BAE Systems (Operations) Limited Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2015-07-05, which applied to all BAE Systems (Operations) Limited Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes. AD 2015-07-05 required repetitive external eddy current inspections on the aft skin lap joints of the rear fuselage for cracking, corrosion, and other defects, and repair if necessary. This AD continues to require the actions in AD 2015-07-05, at certain revised compliance times, and also requires repetitive low frequency eddy current (LFEC) inspections for any cracking, corrosion, and other defects in the aft skin lap joints of the rear fuselage and in the fuselage skin panels, and repair if necessary. This AD was prompted by a report of a pressurization problem on an airplane during climb-out; a subsequent investigation showed a crack in the fuselage skin; and that repetitive LFEC inspections in the rear fuselage aft skin lap joints and in the fuselage skin panels are necessary. Certain compliance times must also be revised. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of May 19, 2015 (80 FR 19871, April 14, 2015).

ADDRESSES: For service information identified in this final rule, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; email RAPublications@baesystems.com; Internet <https://www.baesystems.com/Businesses/RegionalAircraft/index.htm>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0508.

Examining the AD Docket

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0508; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South

216th St., Des Moines, WA 98198; telephone 206-231-3228; email

Todd.Thompson@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The Civil Aviation Authority (CAA), which is the aviation authority for the United Kingdom, has issued CAA AD G-2021-0008, dated September 8, 2021 (also referred to as the Mandatory Continuing Airworthiness Information, or the MCAI), to correct an unsafe condition for all BAE Systems (Operations) Limited Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes. You may examine the MCAI in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0508.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2015-07-05, Amendment 39-18133 (80 FR 19871, April 14, 2015) (AD 2015-07-05). AD 2015-07-05 applied to all BAE Systems (Operations) Limited Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes. The NPRM published in the *Federal Register* on May 6, 2022 (87 FR 27037). The NPRM was prompted by a report of a pressurization problem on an airplane during climb-out; a subsequent investigation showed a crack in the fuselage skin; and that repetitive LFEC inspections in the rear fuselage aft skin lap joints and in the fuselage skin panels are necessary. Certain compliance times must also be revised. The NPRM proposed to continue the actions required in AD 2015-07-05, at certain revised compliance times, and also require repetitive LFEC inspections for any cracking, corrosion, and other defects in the aft skin lap joints of the rear fuselage and in the fuselage skin panels, and repair if necessary. The FAA is issuing this AD to address cracking, corrosion, and other defects on the rear fuselage aft skin joints and frames and in the fuselage panels, which could

affect the structural integrity of the airplane. See the MCAI for additional background information.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products.

Related Service Information under 1 CFR Part 51

BAE Systems (Operations) Limited has issued Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017. This service information describes procedures for repetitive external eddy current and LFEC inspections on the aft skin lap joints of the rear fuselage and in the fuselage skin panels, for any cracking, corrosion, and other defects (e.g., surface damage and spot displacement); and repair if necessary.

This AD also requires BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014, which the Director of the Federal Register approved for incorporation by reference as of May 19, 2015 (80 FR 19871, April 14, 2015).

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 20 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Retained actions from AD 2015-07-05	8 work-hours X \$85 per hour = \$680 per inspection cycle	\$0	\$680 per inspection cycle	\$13,600 per inspection cycle
New proposed actions	5 work-hours X \$85 per hour = \$425	\$0	\$425	\$8,500 per inspection cycle

The FAA has received no definitive data on which to base the cost estimates for the repairs specified in this AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive (AD) 2015-07-05, Amendment 39-18133 (80 FR 19871, April 14, 2015); and
- b. Adding the following new AD:

2022-14-13 BAE Systems (Operations) Limited: Amendment 39-22118; Docket No. FAA-2022-0508; Project Identifier MCAI-2021-01120-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected Airworthiness Directives (ADs)

This AD replaces AD 2015-07-05, Amendment 39-18133 (80 FR 19871, April 14, 2015) (AD 2015-07-05).

(c) Applicability

This AD applies to all BAE Systems (Operations) Limited Model BAe 146-100A, -200A, and -300A airplanes; and Model Avro 146-RJ70A, 146-RJ85A, and 146-RJ100A airplanes; certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Reason

This AD was prompted by a report of a pressurization problem on an airplane during climb-out; a subsequent investigation showed a crack in the fuselage skin; and that repetitive low frequency eddy current (LFEC) inspections in the rear fuselage aft skin lap joints and in the fuselage skin panels are necessary. Certain compliance times must also be revised. The FAA is issuing this AD to address cracking, corrosion, and other defects on the rear fuselage aft skin joints and frames and in the fuselage panels, which could affect the structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained Repetitive Inspections, with New Service Information

This paragraph restates the requirements of paragraph (g) of AD 2015-07-05, with new service information.

(1) Within the compliance times specified in paragraphs (g)(1)(i) and (ii) of this AD, as applicable: Do an external eddy current inspection on the aft skin lap joints of the

rear fuselage for cracking, corrosion, and other defects (i.e., surface damage and spot displacement); in accordance with paragraph 2.C. of the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014; or paragraph 2. of the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017. As of the effective date of this AD, use BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017, only.

(i) For any airplane which has accumulated 9,000 flight cycles or more since the airplane's first flight as of May 19, 2015 (the effective date of AD 2015-07-05): Do the inspection within 1,000 flight cycles or 6 months after May 19, 2015, whichever occurs first.

(ii) For any airplane which has accumulated less than 9,000 flight cycles since the airplane's first flight as of May 19, 2015 (the effective date of AD 2015-07-05): Do the inspection before accumulating 10,000 flight cycles since the airplane's first flight.

(2) Repeat the inspection required by paragraph (g)(1) of this AD thereafter at intervals not to exceed the times specified in paragraphs (g)(2)(i) and (ii) of this AD, as applicable to the airplane's modification status.

(i) For Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes post modification HCM50070E, or post modification HCM50070F, or post modification HCM50259A, repeat the inspection at intervals not to exceed 4,000 flight cycles.

(ii) For Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes premodification HCM50070E, and premodification HCM50070F, and premodification HCM50259A, repeat the inspection at intervals not to exceed 7,500 flight cycles.

(h) Retained Corrective Action with Revised Repair Approval

This paragraph restates the requirements of paragraph (h) of AD 2015-07-05, with revised repair approval. If any cracking, corrosion, or other defect is found during any inspection required by AD 2015-07-05: Before further flight as of May 19, 2015 (the effective date of AD 2015-07-05), repair using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or the European Aviation Safety Agency (EASA); or BAE Systems (Operations) Limited's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature. Accomplishment of the repair does not constitute a terminating action for the inspections required by paragraph (g) of this AD. As of the effective date of this AD, repair approvals must be obtained through the Manager, Large Aircraft Section, International Validation Branch, FAA; or the Civil Aviation Authority of the United Kingdom (UK CAA); or BAE Systems (Operations) Limited's UK CAA DOA.

(i) New Requirement of this AD: Repetitive LFEC Inspections

After the effective date of this AD, at the applicable times specified in paragraph 1.D. "Compliance" of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017: Do an LFEC inspection for any cracking, corrosion, and other defects in the aft skin lap joints of the rear fuselage and in the fuselage skin panels, in accordance with paragraph "1. Procedure" of Appendix 2 and Appendix 3 of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017. Repeat the LFEC inspection thereafter at intervals not to exceed the times specified in paragraph 1.D. "Compliance" of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017.

(j) New Requirement of this AD: Corrective Action

If any cracking, corrosion, or other defect is found during any inspection required by this AD: Before further flight, repair using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or the UK CAA; or BAE Systems (Operations) Limited's UK CAA DOA. If approved by the DOA, the approval must include the DOA-authorized signature. Accomplishment of the repair does not constitute a terminating action for the inspections required by paragraph (i) of this AD.

(k) Credit for Previous Actions

This paragraph provides credit for the following actions required by this AD.

(1) This paragraph provides credit for the initial inspection and corrective action on stringer 30, left hand (LH) and right hand (RH), as required by paragraph (g) of this AD, if those actions were performed before May 19, 2015 (the effective date of AD 2015-07-05), using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, dated June 13, 2012, which is not incorporated by reference in this AD.

(2) This paragraph provides credit for the initial inspection and corrective action, as required by paragraph (g) of this AD, if those actions were performed before May 19, 2015 (the effective date of AD 2015-07-05), using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 1, dated June 18, 2013, which is not incorporated by reference in this AD.

(3) This paragraph provides credit for the initial inspection and corrective action, as required by paragraph (g) of this AD, if those actions were performed before May 19, 2015 (the effective date of AD 2015-07-05), using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 2, dated July 15, 2013, which is not incorporated by reference in this AD.

(4) This paragraph provides credit for the initial inspection and corrective action, as required by paragraph (g) of this AD, if those actions were performed before May 19,

2015 (the effective date of AD 2015-07-05), using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014, which was incorporated by reference in AD 2015-07-05, Amendment 39-18133 (80 FR 19871, April 14, 2015).

(5) This paragraph provides credit for the actions required by paragraph (i) of this AD, if those actions were performed before the effective date of this AD using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 4, including Appendix 2, Revision 4, and Appendix 3, Initial issue, dated March 31, 2016.

(l) No Reporting Requirement

Although BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017, specifies to report inspection findings, this AD does not require any report.

(m) Other FAA AD Provisions

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (n)(2) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(i) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(ii) AMOCs for the repetitive external eddy current inspections approved previously for AD 2015-07-05 are approved as AMOCs for the corresponding actions in paragraph (g) of this AD.

(2) *Contacting the Manufacturer:* As of the effective date of this AD, for any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or the UK CAA; or BAE Systems (Operations) Limited's UK CAA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

(n) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) CAA AD G-2021-0008, dated September 8, 2021, for related information. This MCAI may be found in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0508.

(2) For more information about this AD, contact Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3228; email Todd.Thompson@faa.gov.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(5) and (6) of this AD.

(o) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(3) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(i) BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 5, including Appendix 2, Revision 5, and Appendix 3, Revision 1, all dated March 2, 2017.

(ii) [Reserved]

(4) The following service information was approved for IBR on May 19, 2015 (80 FR 19871, April 14, 2015).

(i) BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014.

(ii) [Reserved]

(5) For service information identified in this AD, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; email RAPublications@baesystems.com; Internet <https://www.baesystems.com/Businesses/RegionalAircraft/index.htm>.

(6) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 30, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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